CORNELL UNIVERSITY
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Announcement of the College of Architecture

1922-23

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CALENDAR

1922-23

First Term

1922

Sept. 12. *Tuesday*, Entrance examinations begin.
Sept. 20, *Wednesday*, } Registration and assignment of new
Sept. 21, *Thursday*, } students.
Sept. 22, *Friday*, Registration and assignment of old students.
Sept. 23, *Saturday*, Assignments concluded.
Sept. 25, *Monday*, Instruction begins at 8 a. m.
Oct. 13, *Friday*, Last day for payment of tuition fee for the first term.
Nov. 30, *Thursday*, Thanksgiving Day: *a holiday.*
Dec. 21. *Thursday*, Instruction ends at 1 p.m.

Christmas Recess until Thursday, Jan. 4, 1923, at 1 p.m.

1923

Jan. 4, *Thursday*, Instruction resumed at 1 p.m.
Jan. 11, *Thursday*, FOUNDER'S DAY: *Convocation.*
Jan. 27, *Saturday*, Instruction ends.
Jan. 29, *Monday*, Term examinations begin.
Feb. 7, *Wednesday*, Term ends.
Feb. 8, *Thursday*, *A holiday.*

Second Term

Feb. 9, *Friday*, } Registration of all students.
Feb. 10, *Saturday*, }
Feb. 12, *Monday*, Instruction begins at 8 a. m.
March 2, *Friday*, Last day for payment of tuition fee for the second term.
April 4, *Wednesday*, Instruction ends at 1 p. m.

Spring Recess until Wednesday, April 11, at 1 p.m.

April 11, *Wednesday*, Instruction resumed at 1 p.m.
June 5, *Tuesday*, Term examinations begin.
June 13, *Wednesday*, End of term examinations.
June 20, *Wednesday*, COMMENCEMENT.

COLLEGE OF ARCHITECTURE

FACULTY

LIVINGSTON FARRAND, A.M., M.D., LL.D., President of the University.
FRANCKE HUNTINGTON BOSWORTH, JR., A.B., Dean of the College of Architecture, and Professor of Design.
CLARENCE AUGUSTINE MARTIN, D.Sc., Professor of Architecture.
OLAF MARTINIUS BRAUNER, Professor of Drawing and Painting.
ALBERT CHARLES PHELPS, B.S., M.Arch., World War Memorial Professor of Architecture and Secretary of the Faculty of Architecture.
GEORGE YOUNG, JR., B.Arch., Professor of Architecture.
E. GORTON DAVIS, B.S., Professor of Landscape Architecture.
CHRISTIAN MIDJO, Professor of Freehand Drawing and Modeling.
LEROY P. BURNHAM, M.S.Arch., Assistant Professor of Design.
GEORGE RAY CHAMBERLAIN, M.E., Assistant Professor of Freehand Drawing.
EUGENE DAVIS MONTILLON, B.Arch., Assistant Professor of Landscape Architecture.
HUBERT E. BAXTER, B.Arch., Assistant Professor of Architecture.
WALTER KING STONE, Assistant Professor of Drawing.
ROBERT NORTH, B.Arch., Assistant Professor of Design.
———— ————, Assistant Professor of Landscape Design.
MARIE ELIZABETH WALDRON, Secretary to the Dean.
ELLEN IRENE STEELE, Librarian.

GENERAL STATEMENT

The College of Architecture is a professional school, designed to prepare students for taking up ultimately the independent practice of a profession. It offers courses leading to the degree of Bachelor of Architecture, or Bachelor of Landscape Architecture, or Bachelor of Fine Arts. The first of these courses is designed for the student who intends to practice architecture; it may be taken as a preparation for engaging in the manufacture of building materials or in the business of construction. The second is designed for the student who intends to practice landscape architecture; and the third, for the artist or prospective practitioner of any of the decorative arts.

The number of students in the college is limited in order to insure, throughout the course, that close personal association between teacher and pupil which is necessary for effective instruction in any of the fine arts. The courses are planned for the student who intends to fit himself for the practice of a profession. The work is competitive. The standard of scholarship is maintained by the students upon a professional basis. It is therefore inadvisable for those not vitally interested to attempt the work of any of these courses.

The course of study leading to any of the three degrees named above requires, normally, five years of work. It is possible, however, for a thoroughly prepared and ambitious student to qualify himself for any one of the three degrees in four years. In order to do that, he must present for entrance all the scheduled elective subjects (Intermediate Algebra, Advanced Algebra, Trigonometry, Physics, and Chemistry), so as not to have to take them in college, and must

also maintain a high grade in his college work, for the rate of a student's progress in the college is determined in large part by the quality of his work and not by the quantity of it. The time element in any art education, however, is of such value that crowding of the work is not wise.

BUILDINGS AND EQUIPMENT

The College of Architecture occupies the third and fourth floors of White Hall and the top and a part of the second floor of Franklin Hall. The college offices, the college library, and the lecture and exhibition rooms occupy the third floor of White Hall. A suite of three drafting rooms, opening together so as to form virtually a single room approximately 45 by 156 feet in dimension, occupies the entire fourth floor. On the top floor of Franklin are well-lighted studios devoted to the work in freehand drawing, painting, and modeling.

The college library is one of the best in the country, and the student is permitted and encouraged to use the books, photographs, and drawings freely.

A carefully selected collection of about 24,000 lantern slides is used constantly in connection with the lectures upon history, theory, and construction.

The exhibition rooms are in use for the exhibition of current work in art and design or for exhibitions of drawings, paintings, and textiles, which serve to keep the student in touch with the work of other schools of architecture, and to familiarize him with the work of the best practitioners and artists.

REQUIREMENTS FOR ADMISSION

Candidates for admission should consult the *General Circular of Information* which will be sent post-free on application to the Secretary of Cornell University, Ithaca, New York. All applications for admission to the freshman class should be addressed to the Registrar.

The subjects that may be offered for admission to the College of Architecture are named in the following list, and the figure in parenthesis following each subject indicates its value expressed in units and shows the maximum and minimum amount of credit allowed in the subject. A unit represents five prepared recitations a week for one year of study.

1a.	English 1	(1)	5b.	Second Year French	(1)
1b.	English 2	(1)	5c.	Third Year French	(1)
1c.	English (elective)	(1)	5d.	Fourth Year French	(1)
2a.	First Year Greek	(1)	6a.	First Year Spanish	(1)
2b.	Second Year Greek	(1)	6b.	Second Year Spanish	(1)
2c.	Third Year Greek	(1)	6c.	Third Year Spanish	(1)
3a.	First Year Latin	(1)	6d.	Fourth Year Spanish	(1)
3b.	Second Year Latin	(1)	7a.	First Year Italian	(1)
3c.	Third Year Latin	(1)	7b.	Second Year Italian	(1)
3d.	Fourth Year Latin	(1½)	7c.	Third Year Italian	(1)
4a.	First Year German	(1½)	8a.	Ancient History	(½–1)
4b.	Second Year German	(1)	8b.	Modern History	(½–1)
4c.	Third Year German	(1)	8c.	Am. History, Civics	(½–1)
4d.	Fourth Year German	(1)	8d.	English History	(½–1)
5a.	First Year French	(1)	9a.	Elementary Algebra	(1)

9b. Intermediate Algebra	(½)	13. Biology*	(1)
9c. Advanced Algebra	(1)	14. Botany*	(½–1)
9d. Plane Geometry	(1)	14a. Zoology*	(½–1)
9e. Solid Geometry	(½)	15. Bookkeeping	(½–1)
9f. Plane Trigonometry	(½)	16. Agriculture	(½–1)
9g. Spher. Trigonometry	(½)	17. Drawing**	(½–1)
10. Physics	(1)	18. Manual Training**	(½–1)
11. Chemistry	(1)	19. Any high school subject or	
12. Physical Geography	(½–1)	subjects not already used	(½–1)

Admission to the Freshman Class

For admission to the freshman class men must be at least sixteen years of age and women seventeen, and the applicant is required to offer fifteen entrance units which must include English (3), History (1), Elementary Algebra (1), Plane Geometry (1), Solid Geometry (½), either Greek, German, French, Latin, Italian, or Spanish (3 units in one language or 2 units in each of two of these languages.)

Among the remaining 5½ or 4½ units there must be included credit in at least one of the following: Algebra (Intermediate and Advanced), 1 unit; Plane Trigonometry, ½ unit; Physics, 1 unit or Chemistry, 1 unit. Not more than a total of one unit will be accepted for entrance in Bookeeping, Agriculture, Drawing, and Manual Training.

Admission to Advanced Standing

A student who, having already attended some technical school or institution of collegiate rank, desires advanced standing in any regular course in the College of Architecture of Cornell University, should file with the Registrar of Cornell University, on an official blank to be obtained from him, a formal application for admission to advanced standing in the College of Architecture, along with an official certificate from the institution already attended, of his honorable dismissal, his entrance credits in detail, his terms of attendance, and the amount of work that he has completed, with a detailed statement of the courses pursued for which he desires credit at Cornell University. He should also send a catalogue of the institution, writing his name on it and marking the entrance requirements that he has satisfied and each subject that he has completed.

Credit for work completed in other institutions must be obtained from the Registrar *at the time of entrance* and students should obtain all possible credits at this time, even though not needed for immediate use.

Admission as Special Students

All correspondence concerning admission of special students should be addressed to the Dean of the College of Architecture. Special students are primarily students of advanced experience in the practice of their art. They must be at least twenty-one years of age, and must have had a high school training or its

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*If Biology (1 unit) is offered, neither Botany (½ unit) nor Zoology (½ unit) may be counted.
**A student may not count under No. 19 work in subjects Nos. 1–18 until he has offered the maximum (e. g. 4 units of Latin, English, German, French, or Spanish; 3 units of Greek or Italian; 1 unit of Physics or Chemistry) in Nos. 1–18.

equivalent, including a working knowledge of Plane Geometry and Solid Geometry and in the case of architects of algebra through quadratic equations. They should have at least three years' practical experience or its equivalent and submit with their application examples of their work or draftsmanship.

A Six-Year Course Leading to the Degrees of B. Arch. and C. E., or B. S. Arch. and C. E.

Students, by special arrangement between the colleges concerned, may take a course covering a period of approximately six years leading to the degrees granted respectively by the two colleges.

Admission as Graduate Students

All correspondence relating to graduate work should be addressed to the Dean of the Graduate School.

In all departments of the College of Architecture work is arranged to meet the special needs of graduate students. Candidates for advanced degrees in architecture must be graduates of schools of equal standing with the College of Architecture, and their training in design or other subjects elected for graduate study must be equivalent to the training required in the same subjects by the College of Architecture for the degree of Bachelor of Architecture.

PAYMENTS TO THE UNIVERSITY

For information regarding payments to the University and the expenses of living in Ithaca, see the *General Circular of Information*.

FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

For detailed information concerning State scholarships and University undergraduate scholarships, which are open to students in architecture in common with other students in the University, see the *General Circular of Information*.

A University fellowship of the value of $400 with free tuition is awarded annually to a graduate student in architecture.

The Beckwith Brown Memorial Medal may be awarded each year to the two members of the graduating class who have made the best record in design in their senior year.

The Sands Memorial Medal may be awarded for special excellence in any individual piece of work in any course given in the College.

The Student Medal of the American Institute of Architects is awarded to the member of the graduating class whose record is the best throughout the entire course, and the person to whom the medal is awarded is invited to exhibit his work at the next annual convention of the Institute.

Through the **Beaux-Arts Institute of Design** numerous prizes are offered for excellence of work in design. These prizes are open to students in the College of Architecture who frequently compete for them with success and distinction to themselves and to the College.

The Fuertes Memorial Prizes in Oratory (first prize $125, second prize $35, and third prize $25) are open to students in architecture on equal terms with students in engineering.

COURSE LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE

This course is intended for the person who expects to ultimately become a practicing architect. The student in order to become eligible for this degree must complete the courses in Military Drill and Hygiene and the following as listed under a normal five-year schedule. The amount of work that a student is permitted to carry each term is dependent upon the excellence of his scholastic record, hence the actual time required for the completion of the course will depend upon his ability as indicated by that record.

First Year

	No. Course	*1st Term*	*2nd Term*
Theory of Architecture	101	1	0
Elementary Design	111–2	3	3
Elementary Drawing	131–2	3	3
History of Architecture	142	0	3
Descriptive Geometry	151–2	2	3
Physics or Algebra		0	5
Trigonometry	3	3	0
English	1	3	0
		15	17

Second Year

Theory of Architecture	202	0	1
Architectural Design	213–4	4	4
Elements of Color	133–4	1	1
History of Architecture	241–2	3	3
Analytic Geometry and Calculus	8	3	3
Perspective	252	0	1
Modeling	234	0	2
Materials of Construction	262	0	2
Chemistry	1	6	0
		17	17

Third Year

Architectural Design	213–314	4	6
Water Color	331	3	0
Mechanics	321	2	0
Strength of Materials	322	0	3
Masonry Construction	361	2	0
Carpentry	362	0	2
History of Painting and Sculpture	341–2	1	1
Life and Antique	231–2	2	2
Public Speaking	29	3	0
Heating and Plumbing	364	0	2
		17	17

Fourth Year

Architectural Design	313–4	6	6
Structural Design	421–2	3	2
Concrete Construction	280	0	3
Working Drawings	461	4	0
English		0	3
Electives		3	3
		16	17

Fifth Year

Advanced Design and Thesis	413–4	10	10
History of Modern Architecture	542	0	2
Electives		6	5
		16	17

CONSTRUCTION OPTION LEADING TO THE DEGREE OF BACHELOR OF ARCHITECTURE

This course is intended for the person who is interested in the manufacture of materials, or in the constructional phase of architecture. The student in order to become eligible for this degree must complete the courses in Military Drill and Hygiene and the following as listed under a normal five-year schedule. The amount of work that a student is permitted to carry each term is dependent upon the excellence of his scholastic record, hence the actual time required for the completion of the course will depend upon his ability as indicated by that record.

First Year

	No. of Course	*1st Term*	*2nd Term*
Theory of Architecture	101	1	0
Elementary Design	111–2	3	3
Elementary Drawing	131–2	3	3
History of Architecture	142	0	3
Descriptive Geometry	151–2	2	3
English	1	3	0
Trigonometry	3	3	0
Physics or Advanced Algebra		0	5
		15	17

Second Year

Theory of Architecture	202	0	1
Architectural Design	213–4	4	4
Elements of Color	133–4	1	1
Modeling	234	0	2
History of Architecture	241–2	3	3
Perspective	252	0	1
Analytics and Calculus	4,5	3	5
Chemistry	1	6	0
		17	17

Third Year

Architectural Design	213–314	4	6
Masonry Construction	361	2	0
Analytics and Calculus	6	3	0
Elementary Surveying (C.E.)	110	0	3
Mechanics (C.E.)	220–1	5	5
Materials Laboratory (C.E.)	222	0	2
Materials of Construction (C.E.)	225	3	0
		17	16

Fourth Year

Architectural Design	313	6	0
Antique	232	0	3
History of Painting and Sculpture	341–2	1	1
Carpentry	362	0	2
Heating and Plumbing	364	0	2
Structural Design (C.E.)	270–1	4	3
Steel Buildings (C.E.)	273	3	0
Concrete Construction (C.E.)	280	0	3
Electives		3	3
		17	17

Fifth Year

Architectural Design and Thesis	313	6	5
Working Drawings	461	4	0
Concrete Design (C.E.)	282	0	3
Public Speaking	29	0	3
Electives		7	5
		17	16

COURSE LEADING TO THE DEGREE OF BACHELOR OF FINE ARTS

This course is intended for the person who expects to become an artist. The student in order to become eligible for this degree must complete the courses in Military Drill and Hygiene and the following as listed under a normal five-year schedule. The amount of work that a student is permitted to carry each term is dependent upon the excellence of his scholastic record, hence the actual time required for the completion of the course will depend upon his ability as indicated by that record.

First Year

	No. of Course	*1st Term*	*2nd Term*
Theory of Architecture	101	1	0
Elementary Design	111–2	3	3
Elementary Drawing	131–2	3	3
Elements of Color	136	0	2
History of Architecture	142	0	3
Descriptive Geometry	151–2	2	3
History (general)		3	3
Physics	2	5	0
		17	17

Second Year

Theory of Architecture	202	0	1
Antique	231	2	0
Drawing or Modeling from Cast	238	0	4
Still-Life (oils)	235	3	0
Life Class	233	3	0
Modeling	234	0	2
History of Architecture	241–2	3	3
Perspective	252	0	1
Chemistry	1	0	6
English	1	3	0
History		3	0
		17	17

Third Year

Water Color	331	3	0
*Drawing and Modeling from Life	333–4	4	6
History of Painting and Sculpture	341–2	1	1
Historic Ornament	741	2	0
Advanced Perspective	351	1	0
Anatomy	24	3	3
History		0	3
English		3	3
		17	16

Fourth Year

Painting or Modeling from Life	435–6	3	6
Color Composition	431–2	2	2
**Graphic Arts	433–4	2	2
History of Greek Sculpture	1	3	0
Philosophy		3	3
Electives		3	3
		16	16

Fifth Year

Composition	531	1	0
†Painting or Modeling from Life and Composition	532	0	6
††Advanced Painting or Modeling	533–5	6	4
Philosophy of Fine Arts	4	3	0
Electives		6	6
		16	16

*Painter to model; sculptor to draw.
**Etching, engraving, and lithographing.
†Painting or modeling first half of term, thesis second half in any medium.
††From costumed and nude model.

DECORATIVE OPTION LEADING TO THE DEGREE OF BACHELOR OF FINE ARTS

This course is intended for the person who expects to become a practitioner of one of the decorative arts. The student in order to become eligible for this degree must complete the courses in Military Drill and Hygiene and the following as listed under a normal five-year schedule. The amount of work that a student is permitted to carry each term is dependent upon the excellence of his scholastic record, hence the actual time required for the completion of the course will depend upon his ability as indicated by that record.

First Year

	No. of Course	*1st Term*	*2nd Term*
Theory of Architecture	101	1	0
Elementary Design	111–2	3	3
Elementary Drawing	131–2	3	3
Elements of Color	136	0	2
History of Architecture	142	0	3
Descriptive Geometry	151–2	2	3
Physics	2	5	0
General History		3	3
		17	17

Second Year

Theory of Architecture	202	0	1
Architectural Design	213–4	4	4
Life and Antique	231–2	2	3
Modeling	234	0	2
History of Architecture	241–2	3	3
History of Painting and Sculpture	341–2	1	1
Perspective	252	0	1
Materials of Construction	262	0	2
Chemistry		6	0
		16	17

Third Year

Architectural Design	213–314	4	6
Water Color	331	3	0
Color Composition	431–2	2	2
Historic Ornament	741	2	0
Advanced Perspective	351	1	0
Carpentry	362	0	2
Public Speaking	29	0	3
Still Life and Oils	235	3	0
History of Greek Sculpture	1	3	0
English		0	3
		18	16

Fourth Year

Architectural Design	313–4	6	6
Decoration	417–8	4	4
Working Drawings	461	4	0
General History		0	3
Electives		3	4
		17	17

Fifth Year

Advanced Decoration and Thesis	513–4	10	10
Philosophy		3	3
Electives		4	4
		17	17

COURSE LEADING TO THE DEGREE OF BACHELOR OF LANDSCAPE ARCHITECTURE

This course is intended for the person who expects to become a landscape architect. The student in order to become eligible for this degree must complete the courses in Military Drill and Hygiene and the following as listed under a normal five-year schedule. The amount of work that a student is permitted to carry each term is dependent upon the excellence of his scholastic record, hence the actual time required for the completion of the course will depend upon his ability as indicated by that record.

First Year

	No. of Course	*1st Term*	*2nd Term*
Theory of Architecture	101	1	0
Elementary Design	111–2	3	3
Elementary Drawing	131–2	3	3
History of Architecture	142	0	3
Descriptive Geometry	151–2	2	3
English	1	3	0
Trigonometry	3	3	0
Physics or Algebra		0	5
		15	17

Second Year

Theory of Architecture	202	0	1
Landscape Design	215–6	4	4
Elements of Color	133–4	1	1
Modeling	234	0	2
History of Architecture	241–2	3	3
Perspective	252	0	1
Analytics and Calculus	8	3	3
Surveying (C.E.)	110	0	3
Chemistry or Botany		6	0
		17	18

Second Summer

Plant Materials, Woody	13	6	
" " Herbaceous	13	6	
Outdoor Sketching	31	6	
Credit hours		12	

Third Year

Landscape Design	215–316	4	6
Mechanics	321	2	0
Strength of Materials	322	0	3
Water Color	331	3	0
History of Landscape Design	343	3	0
Construction Details	363	0	3
Planting Details	17	3	1
Advanced Surveying (C.E.)	111A	2	0
English		0	3
		17	16

Fourth Year

Theory, Public Properties	402	0	1
Landscape Design	315–6	6	6
Structural Design	421–2	3	2
Construction Details	463	2	0
Planting Details	18	3	1
Geology	1	0	3
Public Speaking	29	3	0
Electives		0	4
		17	17

Fifth Year

Advanced Landscape Design and Thesis	415	14
Electives		6
		20

COURSES OF INSTRUCTION GIVEN IN THE COLLEGE OF ARCHITECTURE

THEORY OF ARCHITECTURE

101. **Theory of Architecture.** First term. Credit one hour. Professor BOSWORTH. Lectures, with sketches and essays by the class.

202. **Theory of Architecture.** Second term. Credit one hour. Prerequisite course 101. Professor BOSWORTH. Lectures, with sketches and essays by the class.

402. **Theory: Planning of Parks and Park Systems.** Second term. Credit one hour. Professor DAVIS. Lectures and assigned reading.

701. **Philosophy of Architecture.** First term. Credit one hour. Prerequisite course 314. Professor BOSWORTH. Lectures, with sketches and assigned work.

702. **Philosophy of Architecture.** Second term. Credit one hour. Prerequisite course 314. Continuation of Course 701. Either term or both may be taken. Professor BOSWORTH.

DESIGN

Courses in Landscape and Architectural Design are given by the Design Staff and consist of individual criticism over the drafting board.

111–2. **Elementary Design.** Throughout the year. Credit three hours a term. Professor BOSWORTH and Assistant Professor BURNHAM. Elementary composition, with drawings in pencil and ink, rendered in wash and color.

213–4. **Architectural Design.** Throughout the year. Credit four hours a term. Prerequisite courses 111–2. A series of problems in architectural composition and planning. Two of the problems each term are identical with those given in 215–6.

215–6. **Landscape Design.** Throughout the year. Credit four hours a term. A series of problems in landscape composition and planning. Two of the problems each term are identical with those given in 213–4.

313–4. **Architectural Design.** Credit six hours a term. A series of problems in architectural composition and studies of detail. Two of the problems each term are identical with those given in 315–6.

315–6. **Landscape Design.** Credit six hours a term. Prerequisite courses 215–6. A series of problems in landscape composition and studies of detail. One problem each term is identical with that given in Course 313–4.

413–4. **Advanced Architectural Design and Thesis.** Credit ten hours a term. Prerequisite courses 313–4. Prerequisite courses for thesis, 461, 421–2.

415. **Advanced Landscape Design and Thesis.** Credit fourteen hours. Prerequisite course 315–6.

417–8. **Decoration.** Throughout the year. Credit four hours a term. Prerequisite course 213-4. A single term may be taken. Professor BOSWORTH and Assistant Professor BURNHAM. A series of lectures and problems in interior composition and detail.

513–4. **Advanced Decoration and Thesis.** Throughout the year. Credit ten hours a term. Prerequisite course 417–8. Professor BOSWORTH and Assistant Professor BURNHAM. A series of problems in advanced interior composition and detail.

714. **Architectural Rendering.** Second term. Credit three hours. Prerequisite course 314. Series of exercises in pencil, pen, and wash renderings. Assistant Professor BURNHAM.

THEORY OF CONSTRUCTION

321. **Mechanics.** First term. Credit two hours. Prerequisite course, Mathematics 8. Professor YOUNG and Assistant Professor BAXTER. A brief study of the principles of analytic and graphic statics with reference to their application in Course 322. Recitations.

322. **Strength of Materials.** Second term. Credit three hours. Prerequisite course 321. Professor YOUNG and Assistant Professor BAXTER. A brief study of the effects of loading in producing stress and deformations. The classroom work is supplemented by problems relating to beams, columns, masonry, and very briefly to reinforced concrete. Two recitations and one computing period.

421–2. **Structural Design.** First term, credit three hours; second term, credit two hours. Prerequisite courses 321 and 322. Professor YOUNG and Assistant Professor BAXTER. The principles studied in Courses 321 and 322 are applied to the structural design of typical architectural problems. Lectures and reports.

721. **Structural Analysis.** First term. Credit three hours. Prerequisite course 422. Professor YOUNG. Open to a limited number of qualified upperclassmen and graduates.

FREEHAND DRAWING AND ART WORK

131–2. **Elementary Drawing.** Throughout the year. Credit three hours a term. Assistant Professor CHAMBERLAIN. Pencil and charcoal drawing from geometric models and the cast.

133–4. **Elements of Color.** Throughout the year. Credit one hour a term. Assistant Professor STONE. Elementary color work from still life.

136. **Elements of Color.** Second term. Credit two hours. Assistant Professor STONE.

231. **Antique.** First term. Credit two hours. Professor BRAUNER and Professor MIDJO. The work consists of drawing from the antique and life.

232. **Drawing from the Antique.** Second term. Credit three hours. Professor BRAUNER. The work consists of drawing from the antique and from life.

233. **Life Class.** First term. Credit three hours. Professor BRAUNER and Professor MIDJO. The work consists of drawing from the nude model.

234. **Modeling.** Second term. Credit two hours. Prerequisite courses 131–2. Professor MIDJO.

235. **Still Life in Oils.** First term. Credit three hours. Professor MIDJO.

238. **Drawing or Modeling from the Cast.** Second term. Credit four hours. Professor MIDJO.

331. **Water Color Painting.** First term. Credit three hours. Prerequisite courses 133–4. Assistant Professor STONE.

333–4. **Drawing and Modeling from Life.** First term, credit four hours; second term, credit six hours. Professor BRAUNER.

431–2. **Color Composition.** Throughout the year. Credit two hours a term. Professor MIDJO. Exercises in original color compositions.

433. **Graphic Arts.** First term. Credit two hours. Assistant Professor STONE. A study of illustrative mediums.

434. **Graphic Arts.** Second term. Credit two hours. Assistant Professor STONE. A continuation of Course 433.

435–6. **Painting or Modeling from Life.** First term, credit three hours; second term, credit six hours. Professor BRAUNER and Professor ——.

531. **Composition.** First term. Credit one hour. Professor MIDJO. Exercises in composition in black and white and in color.

532. **Painting or Modeling from Life.** The first half of the term. The second half of the term will be devoted to a thesis problem in any medium,—this problem to be an original composition. Second term. Credit six hours. Professor BRAUNER and Professor MIDJO.

533–5. **Advanced Painting and Modeling.** First term, credit six hours; second term, credit fours hours. Professor BRAUNER. From the costumed and nude model.

HISTORY

142. **History of Architecture.** Second term. Credit three hours. Professor PHELPS. Egyptian, Greek, Roman, and Byzantine architecture. Lectures with assigned readings, sketches, and examinations.

241. **History of Architecture.** First term. Credit three hours. Prerequisite course 142. Professor PHELPS. Romanesque and Gothic architecture. Lectures with assigned readings, sketches, and examinations.

242. **History of Architecture.** Second term. Credit three hours. Prerequisite course 241. Professor PHELPS. Architecture of the Renaissance and to the beginning of the nineteenth century in the principal European countries. Lectures with assigned reading, sketches, and examinations.

341–2. **History of Painting and Sculpture.** Throughout the year. Credit one hour a term. Professor BRAUNER. A brief survey of the history of Greek sculpture and of Italian painting.

343. **History of Landscape Design.** First term. Credit three hours. Professor DAVIS. Lectures, sketches, and assigned reading.

542. **Modern Architecture.** Second term. Credit two hours. Prerequisite course 242. Professor PHELPS. Nineteenth century architecture in the principal European countries and colonial and more recent work in the United States.

741. **Historic Ornament.** First term. Credit two hours. Prerequisite course 242. Professor PHELPS. Some of the great historic styles of decoration will be analyzed and studied in detail, and the development of furniture, stained glass, and other minor arts will be briefly outlined. Lectures, sketches, and examinations.

743–4. **Historical Seminary**. Throughout the year. Credit two hours a term. Professor PHELPS. Investigation of assigned topics in the history of architecture; review of books and discussions of current periodical literature. For graduates and open to qualified upperclassmen by permission.

GRAPHICS

151–2. **Descriptive Geometry.** First term, credit two hours; second term, credit three hours. Professor YOUNG and Assistant Professor BAXTER. The fundamental principles of descriptive geometry are studied and applied to the solution of problems in projection. Lectures and drawing.

252. **Perspective.** Second term. Credit one hour. Prerequisite courses 151–2. Professor MARTIN. Lectures and drawing.

351. **Advanced Perspective.** First term. Credit one hour. Prerequisite course 252. Professor MARTIN. Lectures and drawing.

APPLIED CONSTRUCTION

262. **Materials of Construction**. Second term. Credit two hours. Professor MARTIN. A brief study of the properties, characteristics, manufacture, and use of the more common materials used in building construction, as plaster, lime, cement, clay products, stone, metals, and wood.

361. **Masonry Construction**. First term. Credit two hours. Prerequisite course 361. Professor MARTIN. Masonry construction as applied to buildings, including survey and setting out, foundation soils, drainage and waterproofing, structural foundations, concrete, stonework, brickwork, tile and terra cotta work, fireproofing, plaster, and stucco.

362. **Carpentry and Roofing.** Second term. Credit two hours. Professor MARTIN. A study of carpentry and joinery as applied to the construction and finish of buildings and a study of roofing with shingles, sheet metals, bituminous compositions, slates, tiles, etc.

363. **Construction Details.** Second term. Credit three hours. Engineering problems peculiar to landscape work. Professor ———.

364. **Heating, Plumbing, and Lighting.** Second term. Credit two hours. Professor MARTIN. A brief study of the principles of heating, ventilation, plumbing, and lighting. Lectures and exercises.

461. **Working Drawings and Specifications.** First term. Credit four hours. Prerequisite courses 362 and 461. Professor MARTIN. The work of this course consists in the preparation of scale drawings and details approximating office practice as closely as possible, and including specification notes and a brief study of the principles of specification writing.

463. **Construction Details.** Second term. Credit three hours. Continuation of the work of Course 363. Professor ———.

762. **Fire Resisting Construction.** Second term. Credit two hours. Professor MARTIN. A study of fire prevention and fire protection in the design, construction, and equipment of buildings. Lectures and assigned reading.

Auxiliary Reading. In addition to the scheduled studies in any of the regular courses leading to a degree in the College of Architecture, the students are required to read, during their term of residence, twenty works of their own selection from grouped lists. The book lists are prepared and an introductory lecture is given each year by one of the professors in the Department of English in the College of Arts and Sciences.

COURSES OF THE REGULAR CURRICULA GIVEN OUTSIDE THE COLLEGE OF ARCHITECTURE

MILITARY SCIENCE AND TACTICS, AND PHYSICAL TRAINING

All men in the first two years of undergraduate courses must, in addition to the scholastic requirements for the degree, take three hours a week in the Department of Military Science and Tactics. This department is a unit of the Reserve Officers' Training Corps of the United States Army. The students are organized in an infantry regiment of twelve regular companies, a battalion of field artillery of three batteries, one headquarters company, one machine gun company, and a band.

For details of the work in the Department of Military Science and Tactics, see the *General Circular of Information.*

All women in the first two years of undergraduate courses, and all men of those two classes who are excused from military drill, must, in addition to the scholastic requirements for the degree, take three hours a week in the Department of Physical Training.

For details of the work in the Department of Physical Training, see the *General Circular of Information.*

HYGIENE AND PREVENTIVE MEDICINE

All students in the first two years of undergraduate courses are required to attend lectures on Hygiene and Preventive Medicine given once a week throughout the college year.

COURSES GIVEN IN THE COLLEGE OF ARTS AND SCIENCES

Mathematics

2. **Advanced Algebra.** Repeated in second term. Credit five hours.

3. **Plane Trigonometry.** Repeated in second term. Credit three hours.

4, 5, 6. **Analytic Geometry and Calculus.** Primarily for students in the College of Engineering. Prerequisite courses 2, 3, or their equivalent. These courses are offered each term.

4. Credit three hours.
5. Credit five hours. Continuation of course 4.
6. Credit three hours. Continuation of course 5.

8. **Analytic Geometry and Calculus.** Throughout the year. Credit three hours a term. Prerequisite courses 2, 3, or their equivalents.

English

1. **Introductory Course.** Throughout the year. Credit three hours a term. Assistant Professor SMITH and assistants.

29. **Oral Expression.** First term. Credit three hours. Professor ———. While other forms of address will not be ignored, the emphasis in this course will be upon training for the clear and convincing interpretation of drawings or plans for important projects as they might be presented before building committees, city councils, civic societies, etc. Problems for discussion will be taken from the daily work of the students.

Greek Art and Antiquities

1. **History of Greek Sculpture.** Throughout the year. Credit three hours a term. Professor ANDREWS. Lectures in the *Museum of Casts.*

Philosophy

4. **The Fine Arts; their Philosophy and History in Outline.** First term. Credit three hours. Professor HAMMOND. An elementary course on aesthetics. Lectures, assigned readings, and examinations.

Physics

2. **Introductory Experimental Physics.** Repeated in second term. Credit five hours. Three lectures, one two-hour classroom period and one two-hour laboratory period each week. Professors MERRITT and GIBBS. Classroom and laboratory work. Hours to be arranged. Assistant Professor HOWE and assistants.

Chemistry

1. **Introductory Inorganic Chemistry.** Repeated in second term. Credit six hours. Lectures, recitations, and laboratory. 1a. Lectures. Professor BROWNE and Mr. GRIFFIN. 1b. Recitations and laboratory.

Geology

1. **Elementary Geology.** Repeated in second term. Credit three hours. Professor RIES and assistants. Lectures and laboratory period. Students must register for laboratory assignments at Elementary Geology Laboratory, *McGraw Hall*, before the beginning of the course. Planned to give beginners the fundamental principles of this branch of science. Those desiring additional work in geology are advised especially to take one or more of the following courses: 1a, 2, 11, 21, 32.

COURSE GIVEN IN THE MEDICAL COLLEGE

[24. **Anatomy.** Throughout the year. Credit three hours a term. Professor KERR. A study in anatomy for the artist. Lectures and drawing periods.] Not given in 1922–23.

COURSES GIVEN IN THE COLLEGE OF AGRICULTURE

1. **General Botany.** First and second terms. Credit three hours a term. Laboratory, one period of two and one-half hours. Assignment to sections must be made at the time of registration. Professor SCHRAMM and assistants. This course is designed to furnish a general knowledge of the fundamentsl facts and principles of plant life. A careful study is made of form, structure, and reproduction of the representatives from the principal groups, with a view to orient the student in the plant kingdom and to acquaint him with the principal evolutionary tendencies exhibited. Considerable attention will be given to life processes, particularly in the higher plants. Laboratory fee, $2.50 a term; deposit $3, for first term only.

17. **Planting Details.** Elementary course. Throughout the year. First term, credit three hours. Second term, credit one hour. Prerequisite course 13. Professor CURTIS. Lectures, drafting, and outdoor practice.

18. **Planting Details.** Advanced course. Throughout the year. First term, credit three hours. Second term, credit one hour. Prerequisite course 17. Professor CURTIS.

Summer Work

13. **Plant Materials, Woody.** Third term. Six hours, credit four hours. A study in woody plant materials and their identification. Professor CURTIS.

13. **Plant Materials, Herbaceous.** Third term. Six hours, credit four hours. A study in herbaceous plant materials and their identification. Professor CURTIS.

31. **Outdoor Sketching.** Third term. Six hours, credit four hours. Professor BAKER.

COURSES GIVEN IN THE COLLEGE OF ENGINEERING

110. **Elementary Surveying.** Freshmen. Either term as assigned. Credit three hours. Use of steel tape, level and transit; fundamental surveying methods, measurement of lines, angles, and differences of elevation; land surveying, areas and plotting. Recitations, field work, computations, and mapping. Textbooks: Breed and Hosmer's *Elementary Surveying*, and Leland and Boothroyd's *Area of Land*. One recitation and two field or computation periods a week. Assistant Professors UNDERWOOD and LAWRENCE, and Messrs. PERRY, PENDLETON, and others. Lincoln Hall.

220. **Mechanics of Engineering.** For sophomores in Civil Engineering. First term. Credit five hours. Repeated in one section, second term. Prerequisite, Mathematics 5. Statics of a material point and of rigid bodies by graphic and by algebraic methods of analysis; chains and cords; centers of gravity; moment of inertia of plane figures; dynamics (kinetics) of a material point; impact; virtual velocities; centrifugal and centripetal forces; pendulums;

moment of inertia of rigid bodies; dynamics (kinetics) of rigid bodies. Textbooks: Church's *Mechanics of Engineering, and Notes and Examples in Mechanics* supplemented by other printed notes and problems. Four recitations and one computing period a week. The computing period will be in charge of an instructor and will be devoted to the solution of mechanics problems, the use of the slide rule, planimeter, etc. The solution of each problem is to be written up in good form and will be criticized by the instructor. If found unsatisfactory, either as to form or matter, it will be returned for revision. Emphasis will be placed particularly upon correct numerical work and consistent use of proper units. Each student is required to provide himself with a slide rule of approved type. Professor GEORGE, Assistant Professor RETTGER, and Mr. HOWELL.

221. **Mechanics of Engineering.** Second term. Credit five hours. Continuation of Mechanics 220. Prerequisite, Mechanics 220. Work; power; energy; fly-wheels; friction; dynamometers; general theorem of work and energy applied to machines; mechanics of materials including stress and strain, tension, shearing, compression, torsion, flexure; elastic curves; safe loads; columns; flexure of beams by semigraphic treatment. Review problems showing application of principles of Mechanics in Engineering Design. Textbooks: Church's *Mechanics of Engineering, and Notes and Examples in Mechanics*, supplemented by other printed notes and problems. Four recitations and one computing period a week. Professor GEORGE, Assistant Professors RETTGER and WEBER, and Mr. HOWELL.

222. **Materials Laboratory.** Sophomores. Either term (about one-half of the class each term). Credit two hours. Should preferably be preceded by or taken with Course 221, and must be preceded by or taken with Course 225. Experimental determination of the properties of materials by mechanical tests. Study of testing machines (their theory, construction, and manipulation); calibration of testing machines and apparatus; commercial tests of iron and steel; tensile, compressive, torsional, shearing, and flexure tests of metals and various woods with stress-strain observations; tests of cement for fineness, specific gravity, normal consistency, time of setting, soundness, and tensile and compressive strength for neat and mortar mixtures; tests of concrete aggregate, and of road material and paving brick. The course is planned to co-ordinate with course 225 and to supplement directly the study of the properties of materials by the actual handling of the materials and by observations of their behavior under stress. Laboratory work two and one-half hours a week. Assistant Professor SCOFIELD and Mr. ———.

225. **Materials of Construction.** Sophomores. Either term (one-half of the class each term). Credit three hours. Should preferably be preceded by, or taken with Course 221, and must precede or be taken with Course 222. The materials studied are: Lime, cement, stone, brick, sand, timber, ores, cast iron, wrought iron, steel, and some of the minor metals and alloys. The chemical and physical properties, uses, methods of manufacture, methods of testing, and unit stresses of each material are considered, particular emphasis being laid on the points of importance to engineers. The work is planned to co-ordinate with the course in Materials Laboratory and to supplement that work where necessary. Three recitations a week. Textbook: Mills's *Materials of Construction*. Assistant Professor SCOFIELD.

270. **Structural Design and Bridge Stresses.** Juniors. First term. Credit four hours. Prerequisite courses 220 and 221.

Structural Design. The recitations cover the graphic analysis of simple beams and roof trusses in chapters I and II of Merriman and Jacoby's *Roofs and Bridges*, Part II. The computations and drawings include complete detail designs and working drawings of wooden joints to resist large tensile stresses, and of a wooden roof truss for given specifications. The object of the course is to show how to apply the principles of mechanics to the design of every detail of the simple structures named, and to study the forms and strength of joints and fastenings used in heavy timber framing. The computations required are to be arranged in systematic order in the form of reports. Reference book: Jacoby's *Structural Details*. Computation and drawing, two and one-half hours a week.

Bridge Stresses. Stresses due to dead, live, and wind loads, initial tension, and impact; panel loads and locomotive axle loads; determination of the position of live loading for greatest stresses; maximum and minimum stresses; analytic and graphic methods are used. The principal types of simple trusses employed in modern construction are considered, in several cases both with and without counterbracing; historical notes on truss bridges. The solution of many numerical examples taken from practice forms a prominent part of the class work. Textbook: Merriman and Jacoby's *Roofs and Bridges*, Parts I and II. Three recitations a week. Assistant Professor BURROWS and Mr. O'ROURKE.

271. **Structural Design.** Juniors. Second term. Credit three hours. Prerequisite course 270. An elementary course in Steel Design. Complete design, detail drawings, bill of material and estimate of weight of a steel roof truss and of a through and deck railroad plate girder bridge. Textbook: Merriman and Jacoby's *Roofs and Bridges*, Part III. Three computation and drawing periods a week. Assistant Professor BURROWS and Mr. O'ROURKE.

273. **Steel Buildings.** Elective. Seniors and graduates. First term. Credit three hours. Prerequisite courses 220, 221, and 271. This course may be substituted for Engineering Design, Course 291. This course comprises the design of the steel framework for a building of the prevailing type used in power house or shop construction. Dead, snow, and wind stress diagrams are drawn for the roof trusses. Provision is made for an electric crane moving the full length of the building and the stresses in the framework due to the movement of the crane are determined. The effect of the wind and the eccentric load due to the crane girder are considered in the design of the columns. Assistant Professor URQUHART.

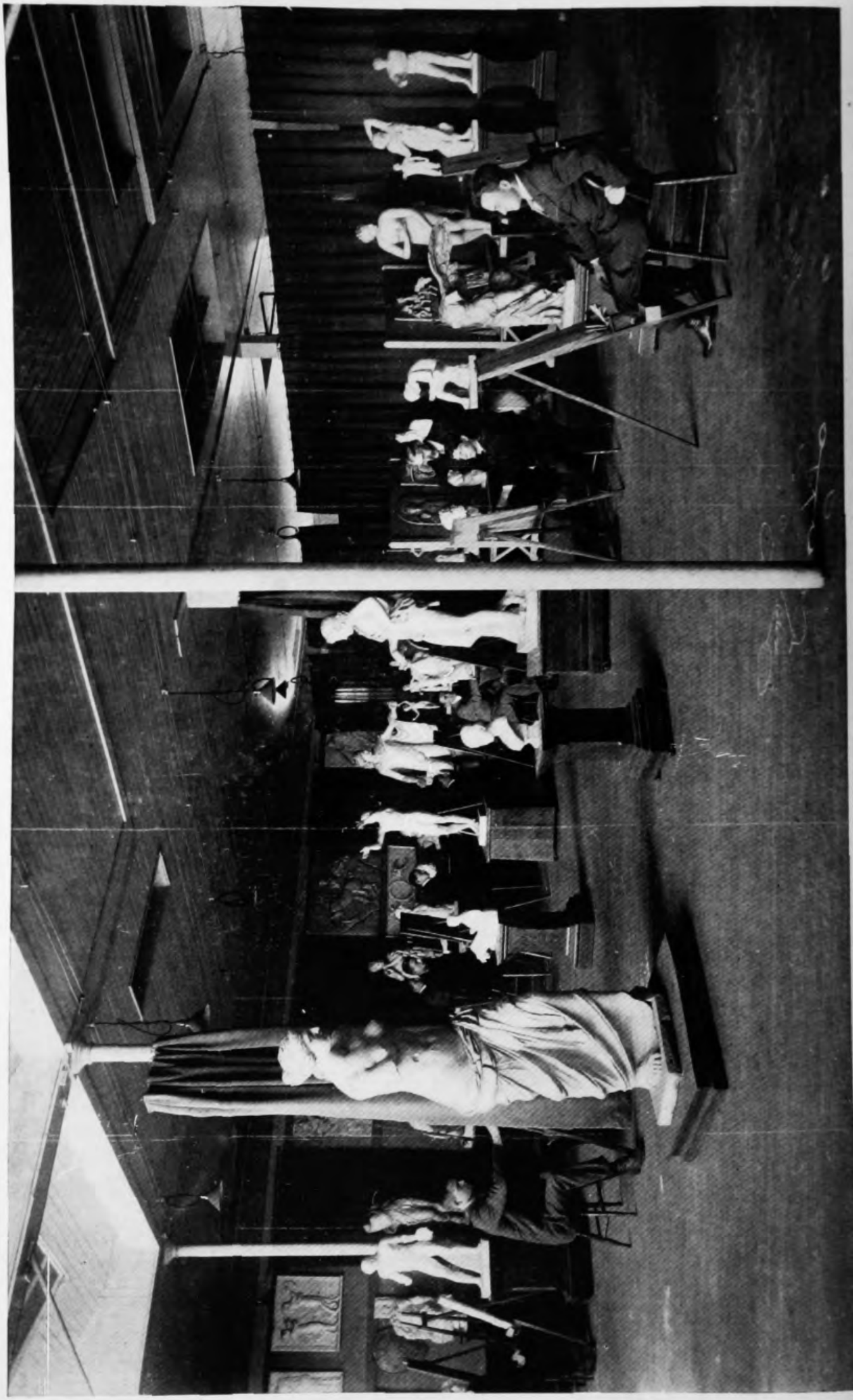
280. **Concrete Construction.** Either term. Credit three hours. Prerequisite courses 220 and 221. Concrete materials, properties of plain concrete, its making and deposition; elementary theory of reinforced concrete as applied to columns, rectangular beams and slabs; T-beams and beams reinforced for compression; direct stress combined with flexure. Laboratory work includes the making and testing of columns, beams, and bond specimens. Two recitations and one laboratory or computing period a week. Assistant Professor URQUHART, Mr. O'ROURKE, and Mr. COLLUM.

282. **Concrete Design.** Elective. Seniors and graduates. Second term. Credit three hours. Prerequisite course 280. Applications of the theory of re-

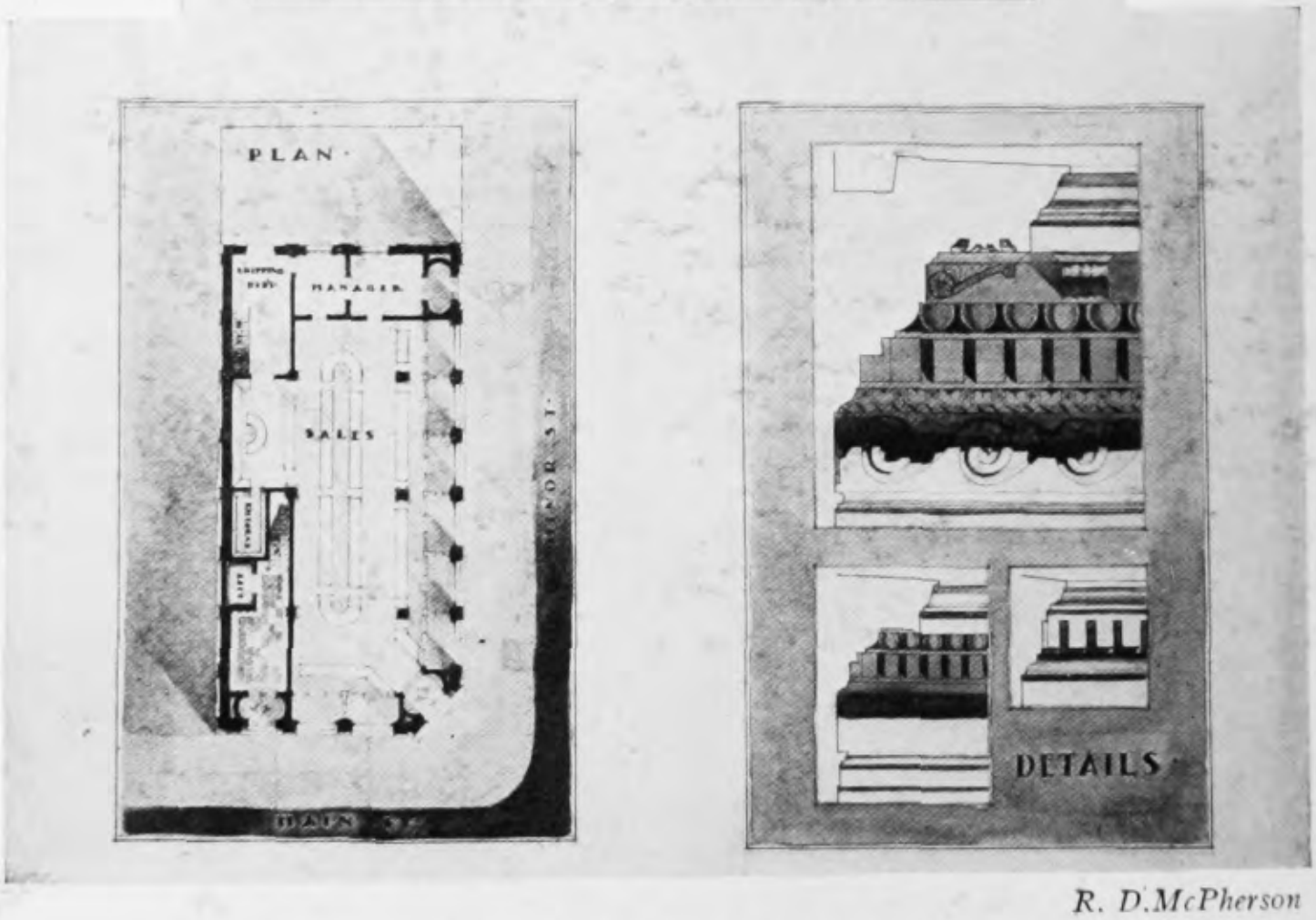
inforced concrete to the design of the various types of retaining walls; selective problems in the design of reinforced concrete structures such as buildings, sewers, etc. Reports and drawings. Seven and one-half hours a week. Assistant Professor URQUHART and Mr. O'ROURKE.

ELECTIVES

The elective hours required in any of the regular courses leading to a degree may be taken either within or without the College of Architecture, subject only to the approval of the professor in charge of such course and the Dean of the College of Architecture.



THE MAIN DRAFTING ROOM IN WHITE HALL



R. D. McPherson

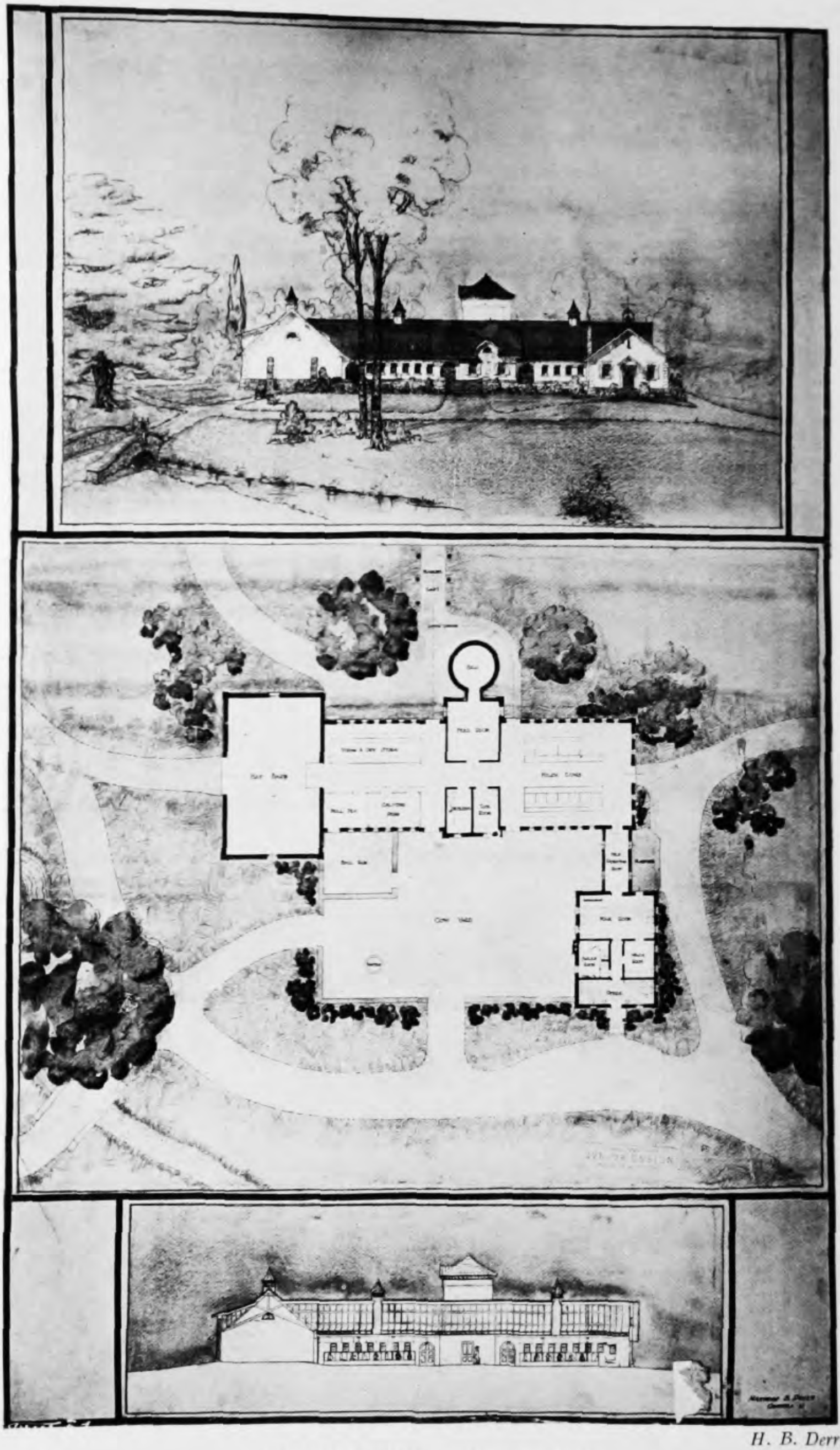
FIRST DESIGN—A STORE AND OFFICE BUILDING

E. B. Mason

A STUDIO BUILDING

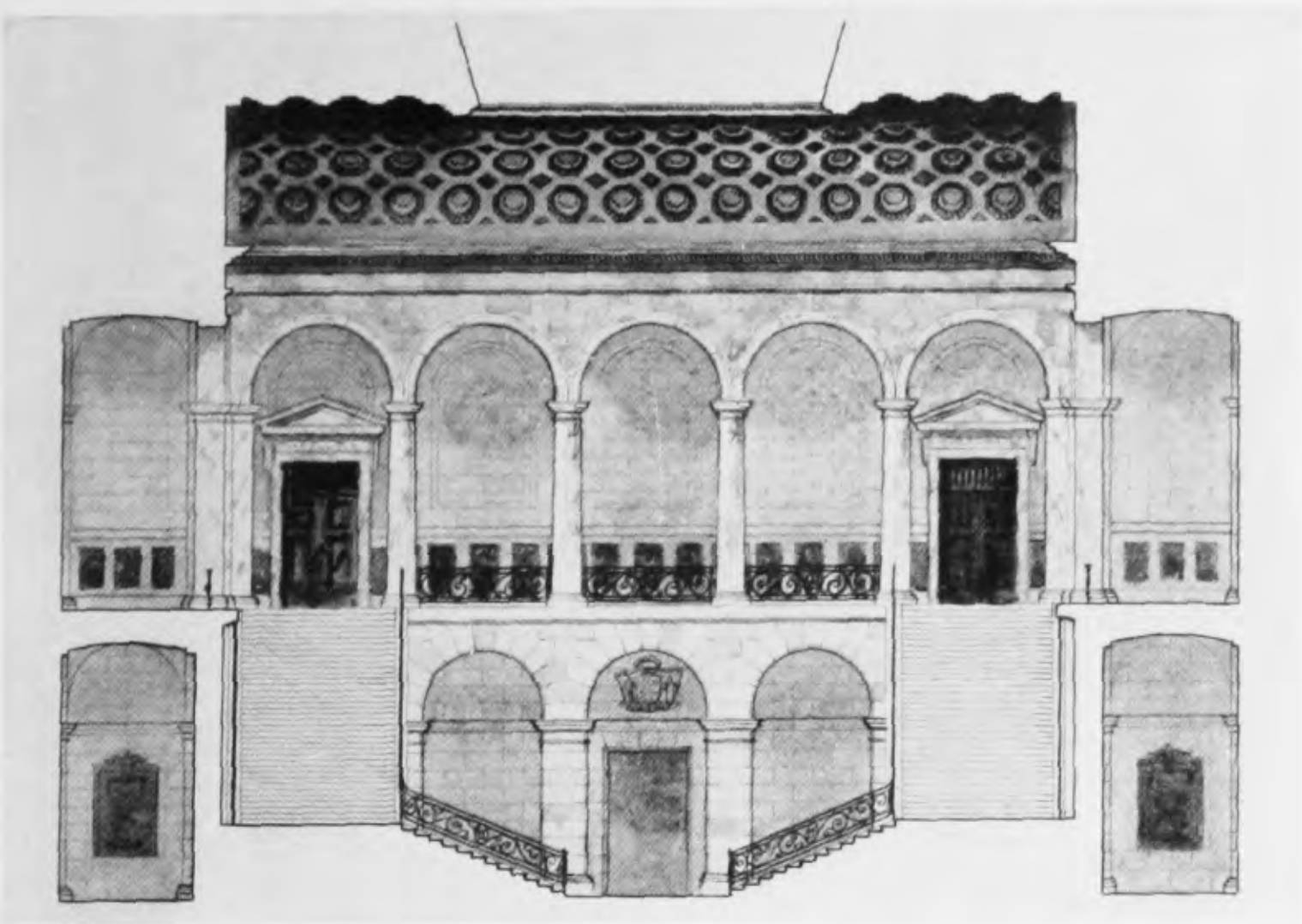
Miss D. F. Levy

A CONCERT HALL IN A GARDEN
FIRST DESIGN

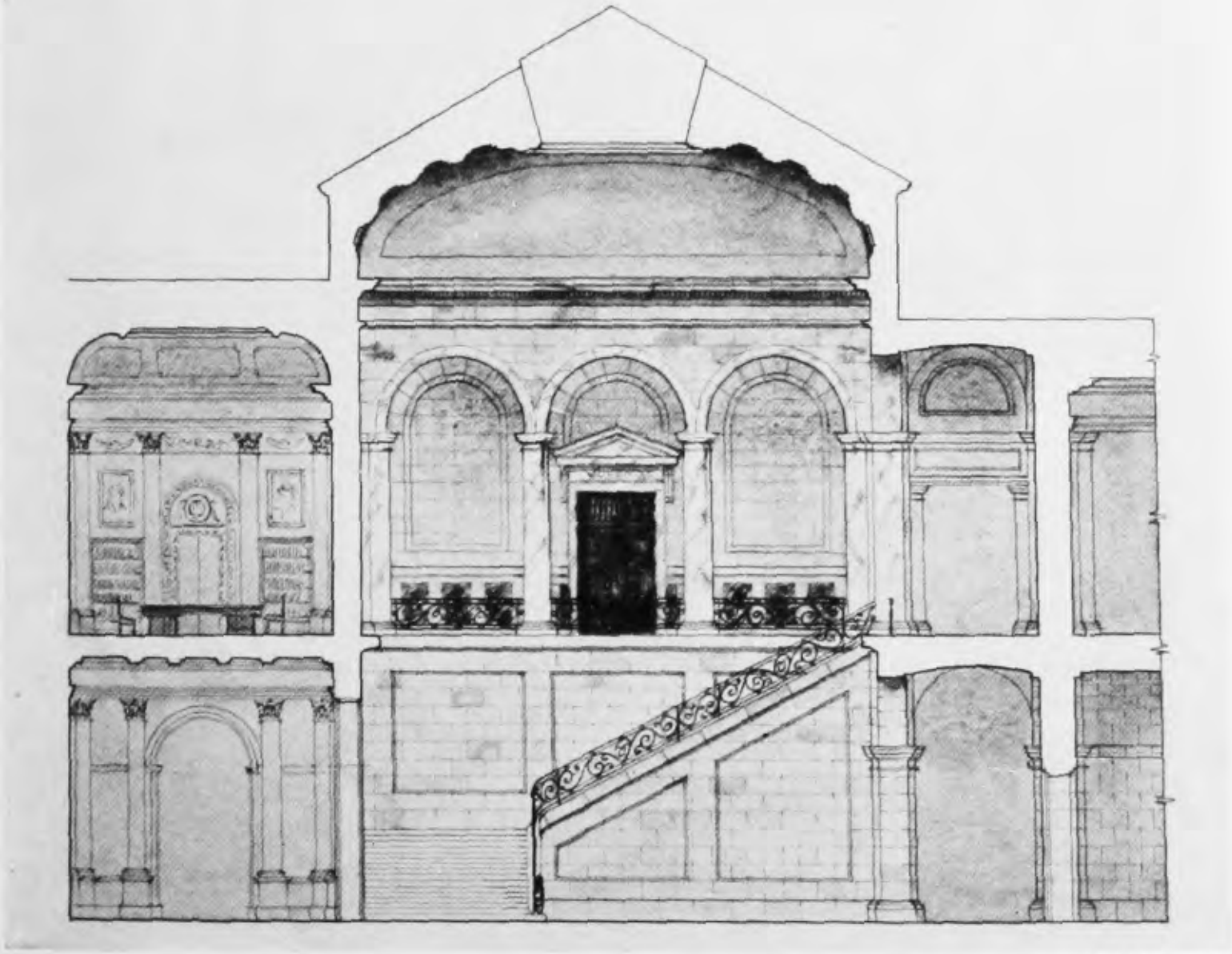


H. B. Derry

SECOND DESIGN—A DAIRY FARM



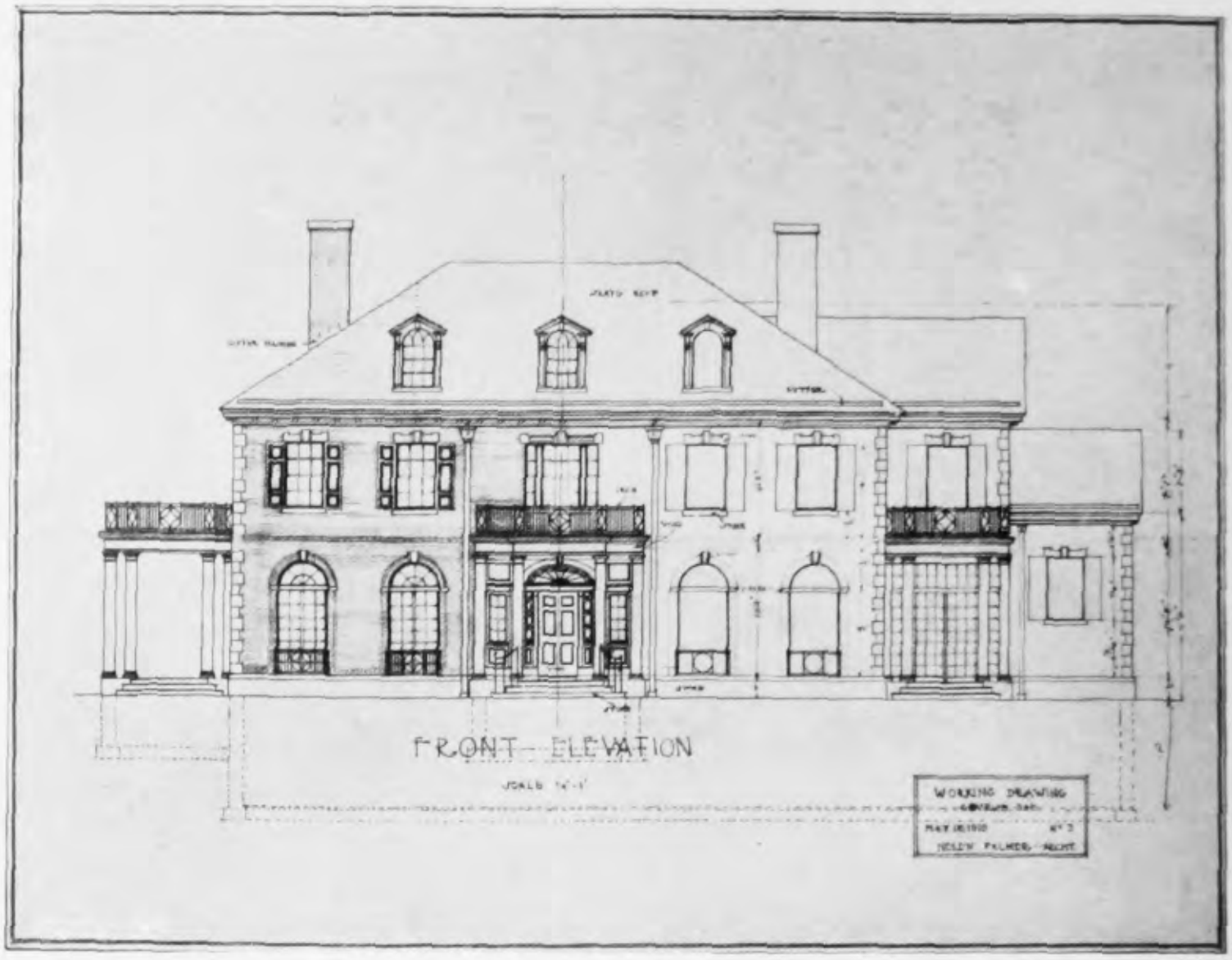
LONGITUDINAL SECTION



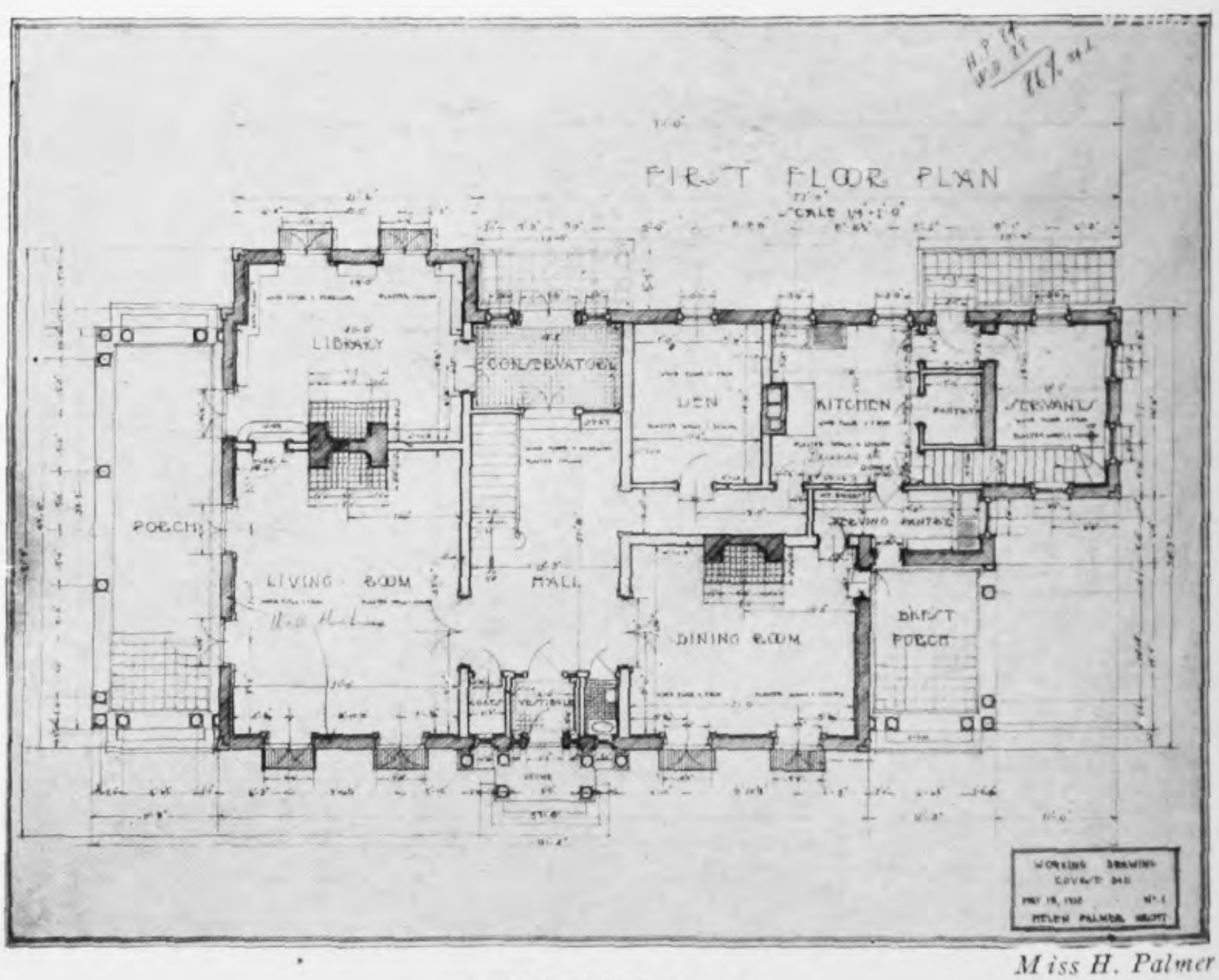
J. N. Bullen

CROSS SECTION

SECOND DESIGN—A STAIR HALL

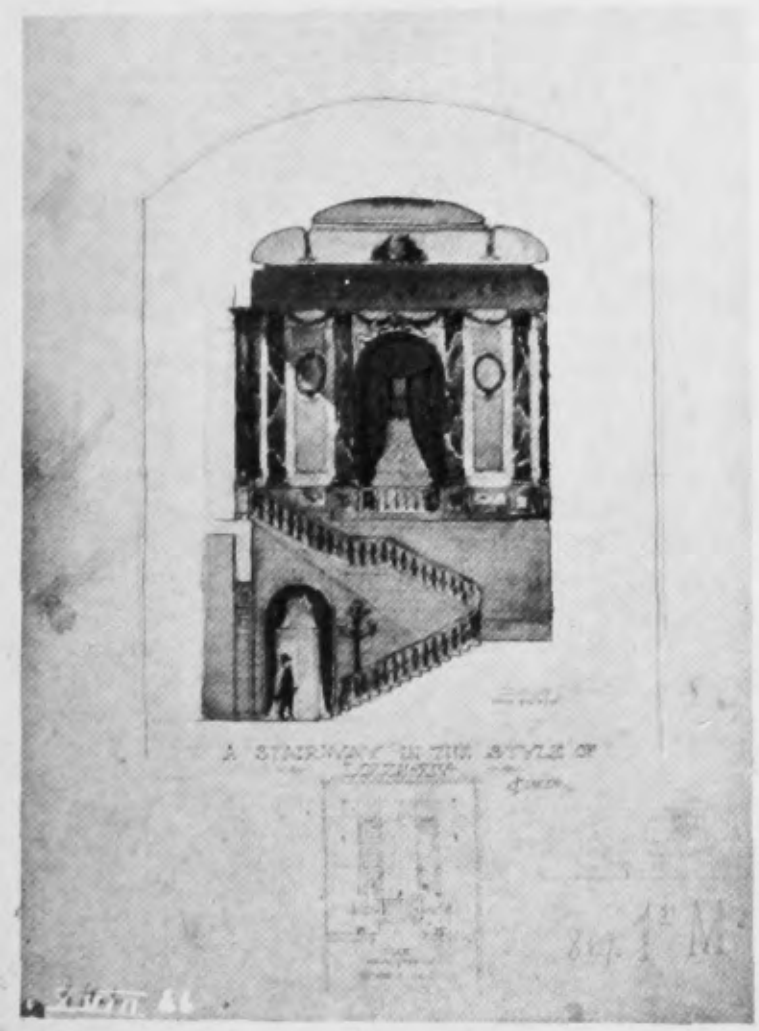


FRONT ELEVATION



Miss H. Palmer

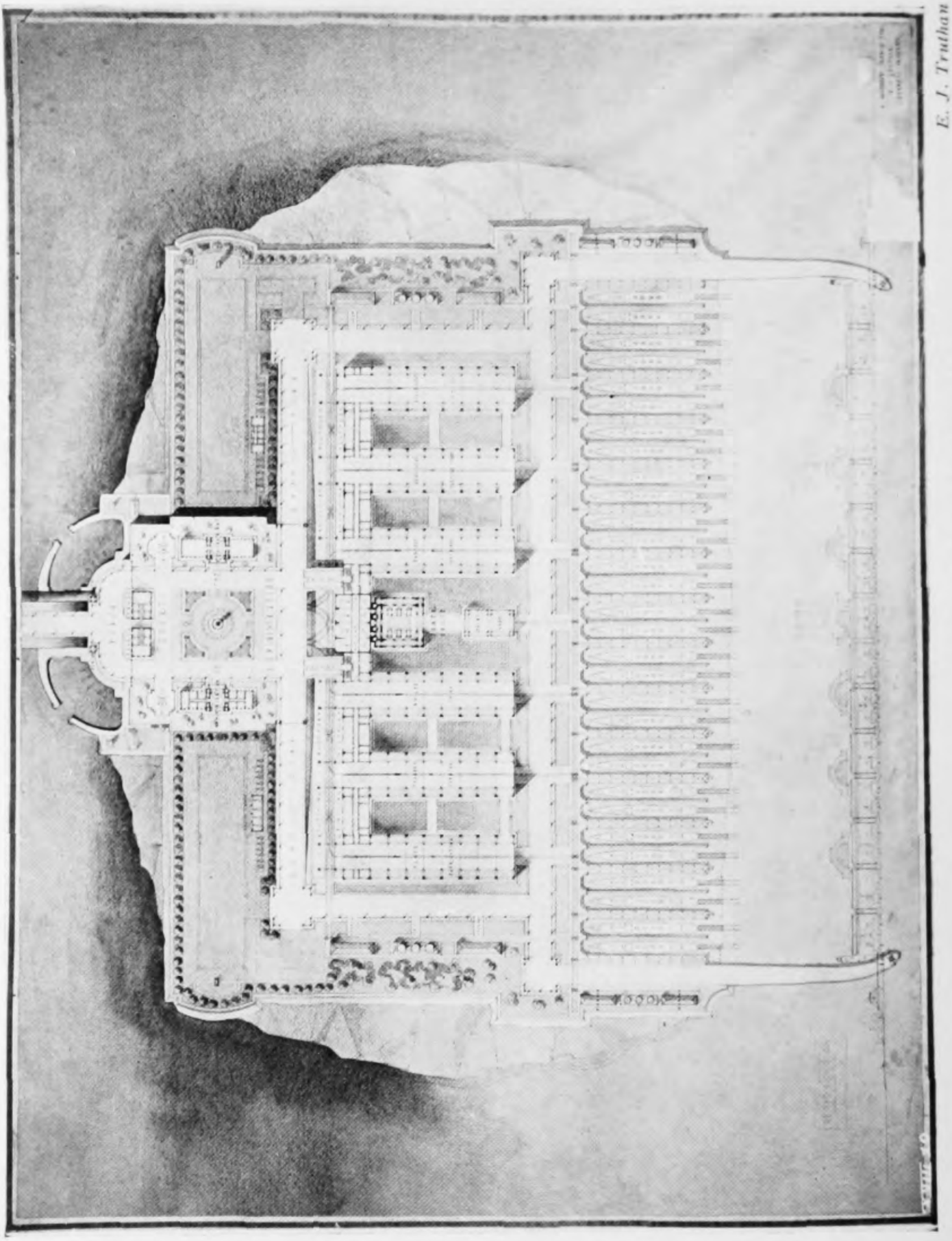
FIRST FLOOR PLAN
WORKING DRAWINGS



W. G. French
C. L. Smith

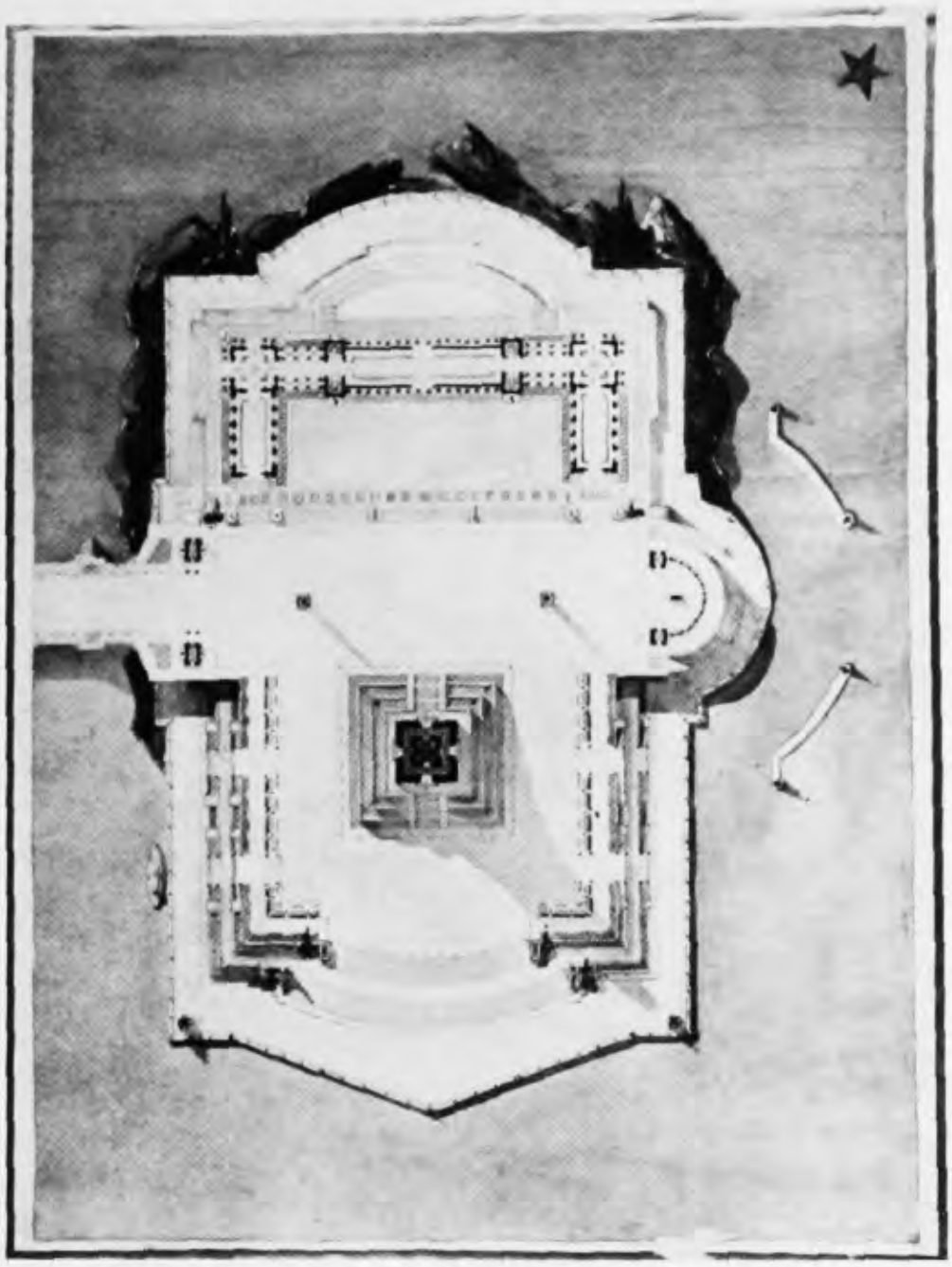
K. F. Coffin
Miss R. Wolcott

DECORATION SKETCHES



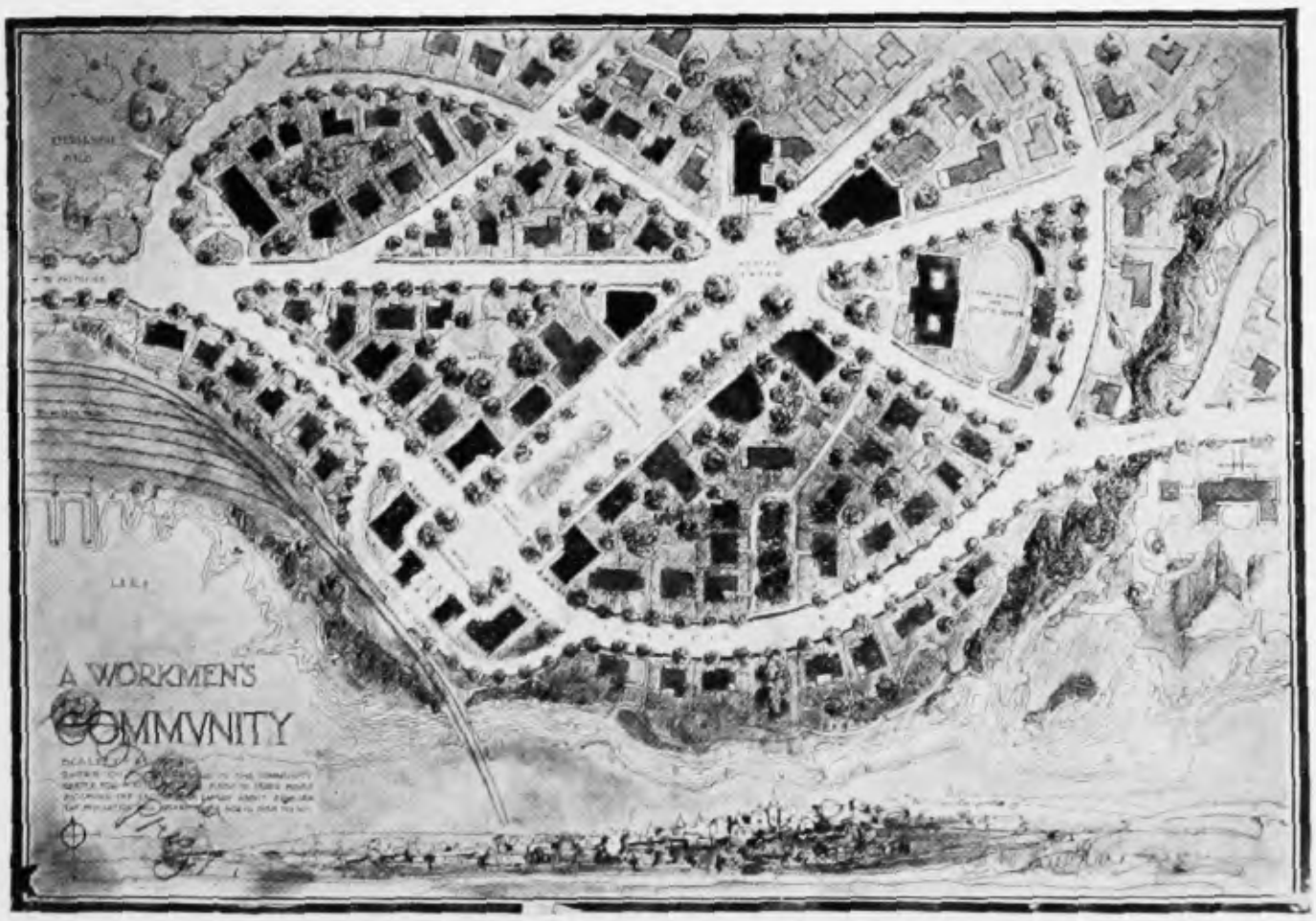
E. J. Trotham

A GOVERNMENT SHIPBUILDING YARD



A. E. Middlehurst

AN ISLAND OF FREEDOM



L. V. Lacy

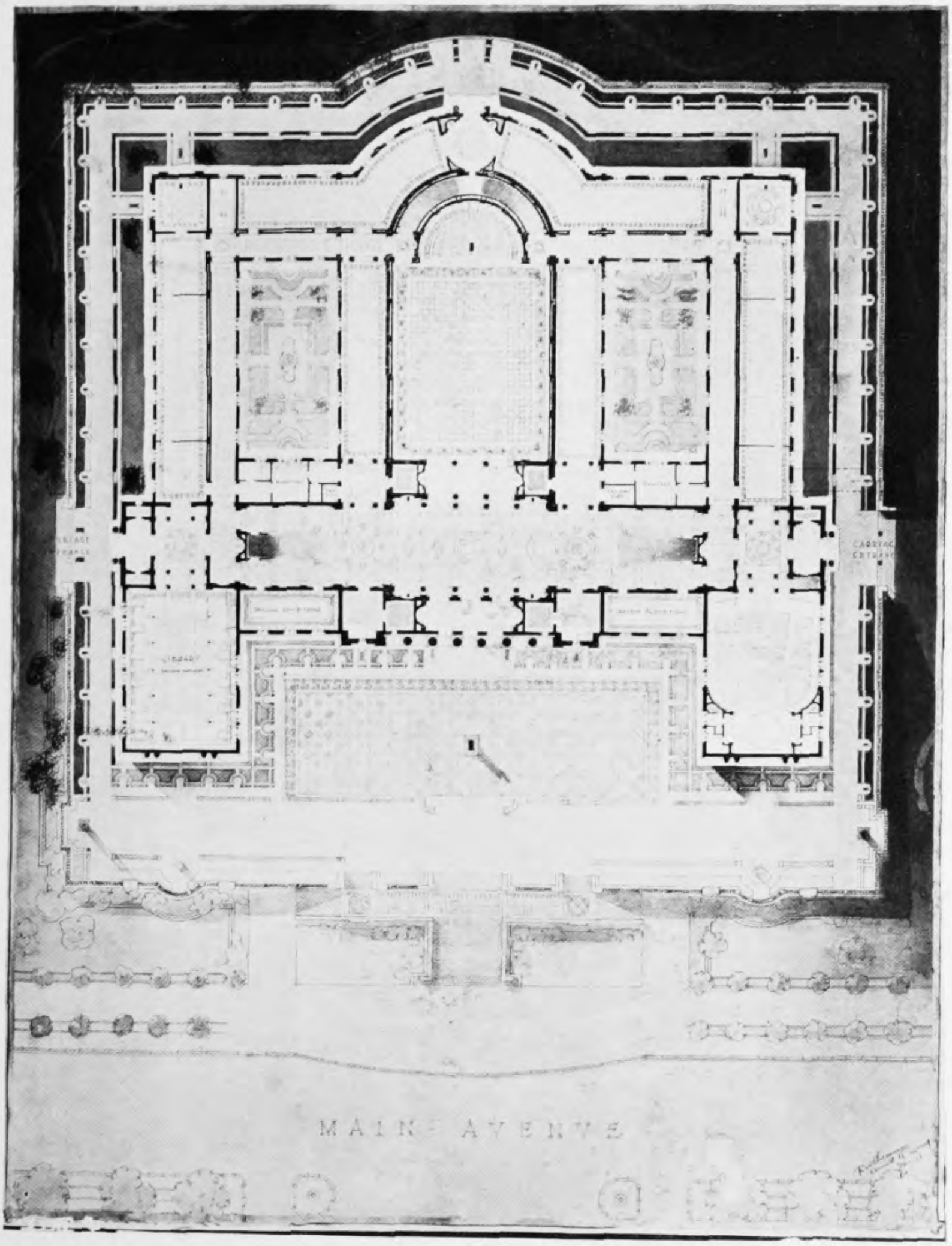
A WORKMEN'S COMMUNITY* (TWO-DAY SKETCH PROBLEM)

ADVANCED DESIGN

*Awarded Warren Prize, $50, S.B.-A.A., 1917.

A. E. Middlehurst

ADVANCED DESIGN—AN ISLAND OF FREEDOM
(Awarded 3d Prize, Special Competition, S. B.-A. A., 1919)

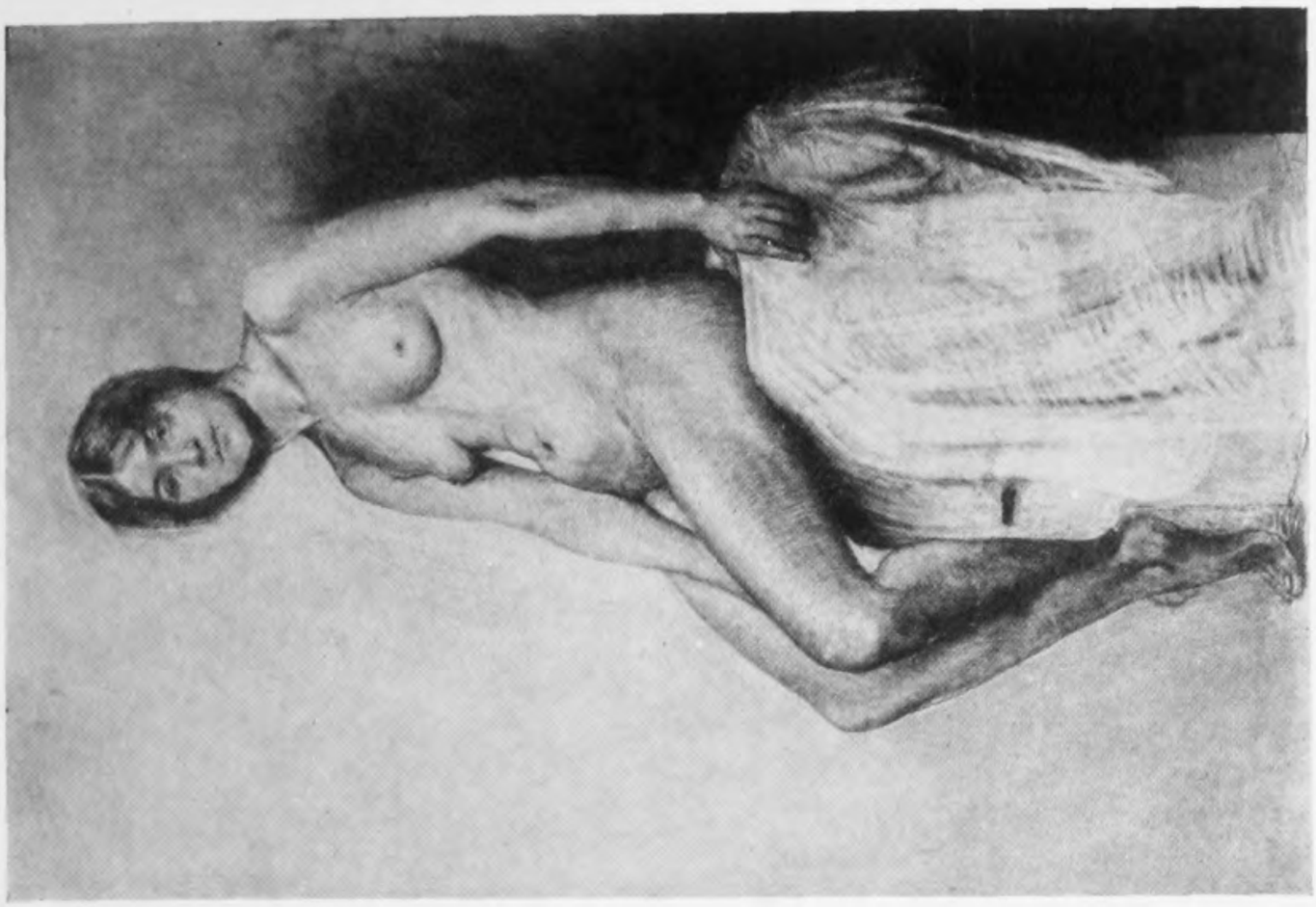


R. W. Cheesman

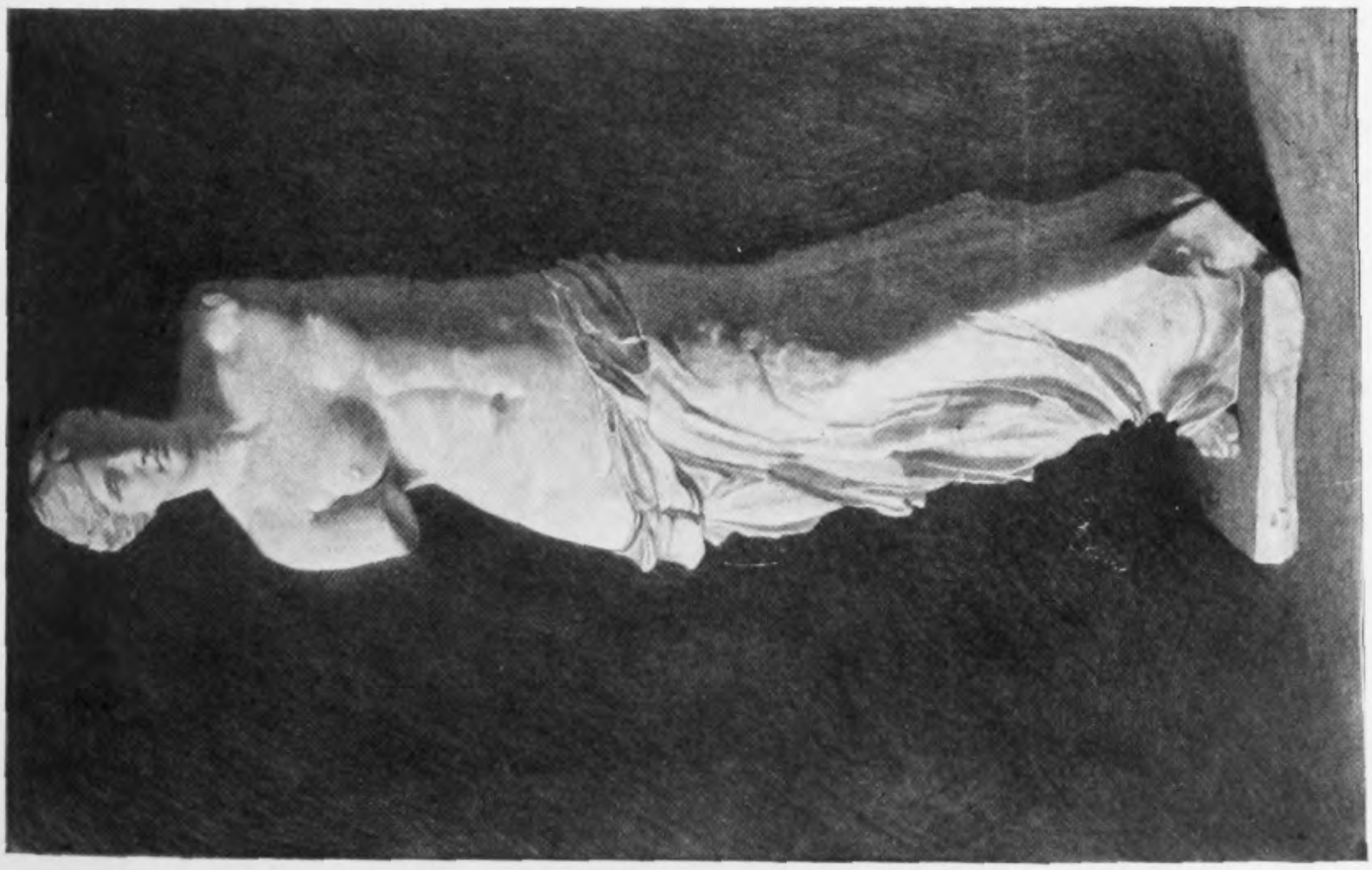
ADVANCED DESIGN—AN ART MUSEUM

R. W. Cheesman

ADVANCED DESIGN—AN ART MUSEUM
(Awarded 2d Prize, $100, S.B.-A.A., Special Competition, 1918)



DRAWING FROM LIFE



DRAWING FROM THE ANTIQUE

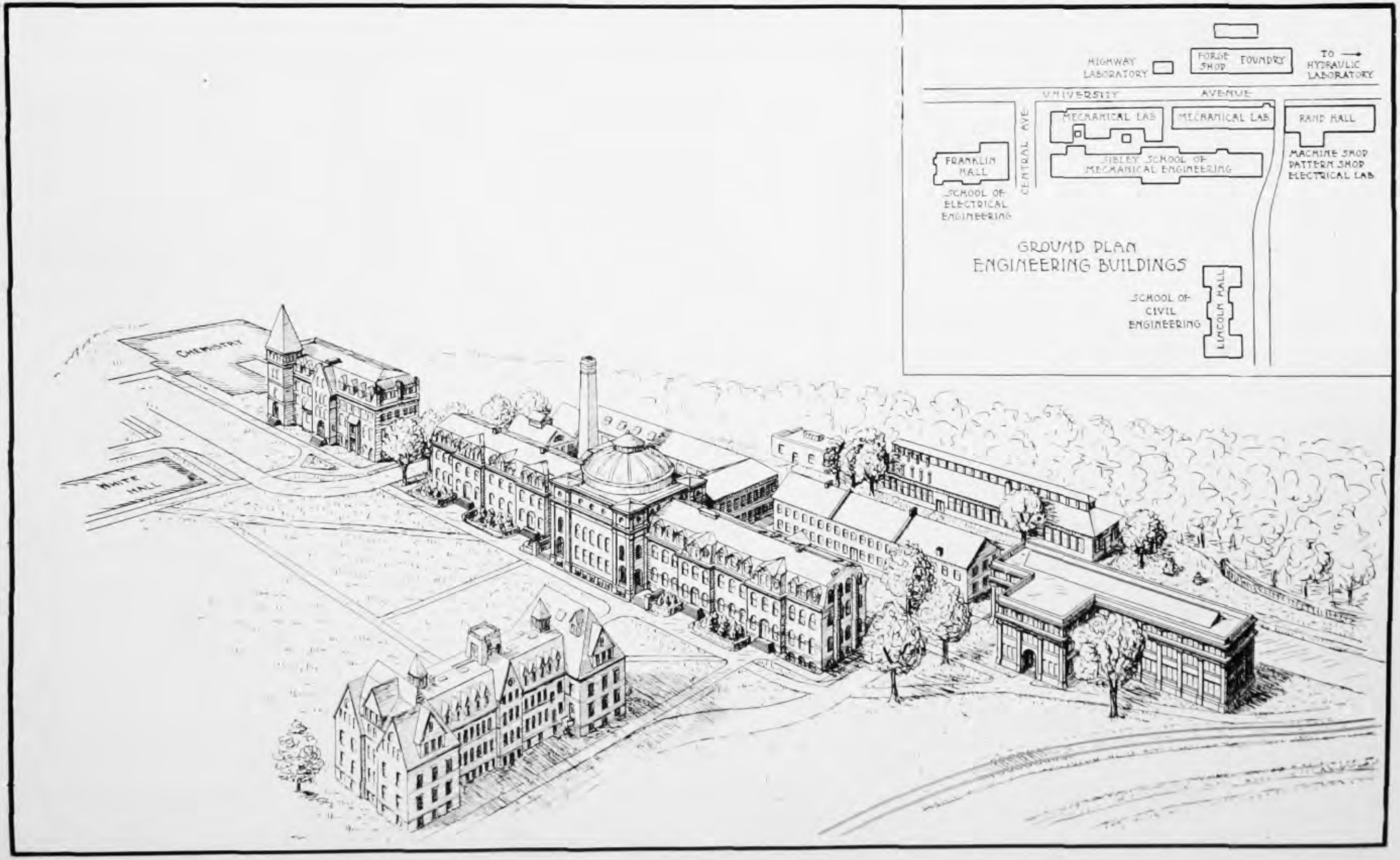
Palais de Fontainbleau
Facade Henry IV.

R. Sussing
4-10-19

Iñigo Jones work.

CENTER BAY TO SOUTH FRONT
Wilton House

F. Gomez Palacio Jr.


CHEMISTRY
WHITE HALL
HIGHWAY LABORATORY
FORGE SHOP
FOUNDRY
TO HYDRAULIC LABORATORY
UNIVERSITY AVENUE
CENTRAL AVE
MECHANICAL LAB
MECHANICAL LAB
RAND HALL
FRANKLIN HALL
SCHOOL OF ELECTRICAL ENGINEERING
SIBLEY SCHOOL OF MECHANICAL ENGINEERING
MACHINE SHOP
PATTERN SHOP
ELECTRICAL LAB
GROUND PLAN
ENGINEERING BUILDINGS
SCHOOL OF CIVIL ENGINEERING
LINCOLN HALL